FIG 2

Bandwidth/modulation tradeoffs

Downstream	assume 64AQM and 6 MHz as reference			
	required S/N for 10^-6	27	21.5	13.5
	Modulation	64 QAM	16 QAM	QPSK

	Bandwidth			
	6000	0.0	5.5	13.5
	2000	4.8	10.3	18.3
	1000	7.8	13.3	21.3

Up Stream	assume 16 QAM and 2 MHz as reference		
	required S/N for 10^-6	21.5	13.5
	Modulation	16 QAM	QPSK

	Bandwidth		
	3200	0.0	8.0
	1600	3.0	11.0
	800	6.0	14.0
	400	9.0	17.0
	200	12.0	20.0

Bandwidth/modulation tradeoffs

downstream assume 64QAM and 6 MHz as reference

required S/N for 10^-6		27	21.5	13.5
Modulation		64 QAM	16 QAM	QPSK

Downstream

Bandwidth	64 QAM	16 QAM	QPSK
6000	0.0	5.5	13.5
2000	4.8	10.3	18.3
1000	7.8	13.3	21.3

Up Stream assume 16 QAM and 2 MHz as reference

required S/N for 10^-6		21.5	13.5
Modulation		16 QAM	QPSK

Bandwidth	16 QAM	QPSK
3200	0.0	8.0
1600	3.0	11.0
800	6.0	14.0
400	9.0	17.0
200	12.0	20.0

Figure 2